

# Claims

- [c1] An electrical connector for electrically connecting an electronic package with a circuit substrate, the electrical connector comprising:  
an insulative housing with a plurality of conductive terminals received therein; and  
a stiffener substantially surrounding the housing;  
wherein the stiffener comprises at least one spring finger extending therefrom for locating the housing in a horizontal direction, and at least one latch extending therefrom for locating the housing in a vertical direction.
- [c2] The electrical connector as claimed in claim 1, wherein the housing comprises a rear portion, the housing defines at least one guiding slot in a side thereof, and the rear portion defines at least one locating slot in a bottom thereof.
- [c3] The electrical connector as claimed in claim 2, wherein the at least one spring finger of the stiffener is located in the at least one locating slot of the housing, and the at least one latch of the stiffener mates in the at least one guiding slot and is engaged on a top surface of the housing.

- [c4] The electrical connector as claimed in claim 3, wherein the stiffener comprises a substantially rectangular supporting portion, the supporting portion comprises a front end, a back end, and a pair of sides respectively interconnecting the front and back ends, and the front and back ends and the sides cooperatively define a central opening therebetween.
- [c5] The electrical connector as claimed in claim 4, wherein each side has a first wall extending therefrom, and the front and back ends each have a second wall extending therefrom.
- [c6] The electrical connector as claimed in claim 5, wherein the first walls extend substantially upwardly from the sides, and the second walls extend substantially upwardly from the respective front and back ends and then bend inwardly and extend in a substantially horizontal directions.
- [c7] The electrical connector as claimed in claim 6, wherein the at least one latch is provided on at least one of the first walls, near the back end.
- [c8] The electrical connector as claimed in claim 7, wherein the at least one latch extends substantially upwardly from said at least one of the first wall, and then bends

inwardly.

- [c9] The electrical connector as claimed in claim 6, wherein the at least one spring finger is defined on the back end of the supporting portion, adjacent the opening.
- [c10] The electrical connector as claimed in claim 9, wherein the at least one spring finger extends substantially in a horizontal direction, and then bends slightly upwardly.
- [c11] A land grid array (LGA) connector for electrically connecting an LGA package with a circuit substrate, the LGA connector comprising:
  - a dielectric housing with a plurality of conductive terminals received therein;
  - a stiffener surrounding the housing; and
  - a metal clip and a lever mounted on opposite sides of the housing;wherein the stiffener comprises a pair of spaced spring fingers and a pair of latches securing the housing therein.
- [c12] The LGA connector as claimed in claim 11, wherein the housing comprises a rear portion, the housing defines a pair of guiding slots in opposite sides thereof, and the rear portion defines a pair of spaced locating slots in a bottom thereof.

- [c13] The LGA connector as claimed in claim 12, wherein the spring fingers of the stiffener are located in the locating slots of the housing, and the latches of the stiffener mate in the corresponding guiding slots and are engaged on a top surface of the housing.
- [c14] The LGA connector as claimed in claim 13, wherein the stiffener comprises a substantially rectangular supporting portion, the supporting portion comprises a front end, a back end, and a pair of sides respectively interconnecting the front and back ends, and the front and back ends and the sides cooperatively define a central opening therebetween.
- [c15] The LGA connector as claimed in claim 14, wherein each side has a first wall extending therefrom, and the front and back ends respectively each have a second wall extending therefrom.
- [c16] The LGA connector as claimed in claim 15, wherein the first walls extend substantially upwardly from the sides, and the second walls extend substantially upwardly from the respective front and back ends, and then bend inwardly and extend in a substantially horizontal directions.
- [c17] The LGA connector as claimed in claim 16, wherein the

latches are respectively provided on the corresponding first walls, near the back end.

[c18] The LGA connector as claimed in claim 17, wherein each latch extends substantially upwardly from the corresponding first wall, and then bends inwardly.

[c19] The LGA connector as claimed in claim 16, wherein the spring fingers are spaced defined on the back end of the supporting portion, adjacent the opening.

[c20] The LGA connector as claimed in claim 19, wherein the spring fingers extend substantially in a horizontal direction, and then bend slightly upwardly.

[c21] An LGA connector comprising:  
a rectangular insulative housing defining thereof a longitudinal direction and a transverse direction perpendicular to each other, said housing including a main portion and a periphery portion surrounding said main portion;  
a rectangular frame-like stiffener grasping said periphery portion;  
a clip essentially pivotally moved about a first longitudinal end of the housing, said clip defining a hook end located around a second longitudinal end of the housing opposite to said first longitudinal end when said clip is in a horizontal locking position; and

a lever essentially pivotally moved about said second longitudinal end of the housing, said lever including at least one acting portion supportably retained by said stiffener and extending along said transverse direction, and a driving portion linked to said acting portion while being offset from said acting portion in both axial and radial directions, and being engageable with the hook section when said clip is in the horizontal locking position.

[c22] The LGA connector as claimed in claim 21, wherein said acting portion defines a pivot axis of said lever.

[c23] An LGA connector comprising:  
a rectangular insulative housing defining thereof a longitudinal direction and a transverse direction perpendicular to each other, said housing including a main portion and a periphery portion surrounding said main portion;  
a rectangular frame-like stiffener grasping said periphery portion;  
a clip essentially pivotally moved about a first longitudinal end of the housing, said clip defining a locating portion constantly close to the first longitudinal end and a hook end located around a second longitudinal end of the housing opposite to said first longitudinal end when said clip is in a horizontal locking position; and  
a lever essentially pivotally moved about said second

longitudinal end of the housing, said lever including at least one acting portion extending along said transverse direction, and a driving portion linked to said acting portion while being offset from said acting portion in both axial and radial directions, and being engageable with the hook section when said clip is in the horizontal locking position; wherein  
said stiffener defines an opening around the first longitudinal end to receive the rotated locating portion of the clip.